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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:	) Date: July 20, 2006
Claude Zeller et. al.	) Attorney Docket No.: F-290
Serial No.: 10/087,518	) Customer No.: 00919
Filed: March 1, 2002	) Group Art Unit: 2136
Confirmation No.: 4085	) Examiner: Eleni A. Shiferaw

Title: METHOD FOR EMBEDDING INFORMATION IN AN IMAGE

TRANSMITTAL OF CORRECTED APPELLANTS BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith is the **APPEAL BRIEF** in the above-identified patent application with respect to the Notice of Appeal filed on February 6, 2006.

Pursuant to 37 CFR 41.20(b)(2), the fee for filing the Appeal Brief is $500.00 which has been previously paid.

Please charge Deposit Account No. **16-1885** in the amount of $500 to cover the above fees.

The Commissioner is hereby authorized to charge any additional fees which may be required to Deposit Account No. **16-1885**.

A duplicate copy of this transmittal is enclosed for use in charging the Deposit Account.

Respectfully submitted,

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CERTIFICATE OF MAILING

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(I0053438.1)

Attorney Docket: F-290

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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CORRECTED APPELLANT'S BRIEF

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Sir:

This brief is in furtherance of the Notice of Appeal filed in this case on February 6, 2006 and the June 20, 2006, Notification of Non-Compliant Appeal Brief.

TABLE OF CONTENTS

This brief contains these items under the following headings and in the order set forth below:

I. REAL PARTY IN INTEREST

Pitney Bowes Inc. is the real party in interest by way of assignment from the .

II. RELATED APPEALS AND INTERFERENCES

There are no related Appeals and Interferences.

III. STATUS OF CLAIMS

A) Claims 1 - 17 are in the application.

B) Claims 1 - 17 are rejected.

C) Claims 1 - 17 are on appeal.

IV. STATUS OF AMENDMENTS

No Amendment subsequent to the November 7, 2005, Final Rejection was entered.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The claimed invention provides a method that detects when an image is copied or scanned to reduce the production of fraudulent images. Information in the form of a plurality of numbers and/or characters (in a normal or encrypted form) that represents some fact, i.e., date that an indicia was affixed to a mail piece, zip code, etc., is going to be embedded in an image in a manner that the embedded information will change in appearance when the image is scanned or photocopied.

The foregoing is accomplished by converting the plurality of numbers into a two-dimensional bar code that is repeated M times in the horizontal direction and N times in the vertical direction in order to produce redundancy so that the two-dimensional bar code will be easier to recover. The two-dimensional bar codes are then filtered by a spreading algorithm that scrambles the information represented by the two-dimensional bar code. Each scrambled two-dimensional bar code will be the same size as the two-dimensional bar code that it replaces. Then each scrambled two-dimensional bar code will be split into two equal parts, i.e., a first part and a second part. Each first part and each second part will contain an upper portion and a lower portion. The upper portion of the first part and the lower portion of the second part will be the same as the respective upper and lower parts of the scrambled two-dimensional bar code. The lower portion of the first part and the upper portion of the second part will be white or empty space. Spread spectrum-like techniques will then be applied to the first part and second part to further hide the information in the first and second parts and to make it easier to recover the information in the first and second parts. Then the plurality of first and second parts will be

expanded over the entire image that is going to be printed. At each location in which information from the plurality of first parts is going to be printed, the printed information will be a printed pixel of a specified dimension, i.e., 2 X 2 (n x n) pixels. At each location in which information from the plurality of second parts is going to be printed, the printed information will be a printed pixel of a specified dimension that differs from the pixels printed in the first parts, i.e., 3 X 3 (m x m) pixels. The plurality of first and second parts will then be printed over the image to produce an image containing hidden information that is difficult to copy. When the image and plurality of first and second parts are scanned and printed and/or photocopied, the printed pixels of specified dimensions in the first and second parts will be distorted in the bit map. In addition, the scanned pixels will not align perfectly with the printed pixels. When the scanned image is converted back to a bit map, this usually increases the percentage of black pixels. Thus, the combination of optical effects, digitations effects and ink spread increase the size of the black areas. The change in size of the printed pixels of specified dimensions in the first and second parts may be observable by the human eye and/or a scanner. Thus, one will be able to determine when an image is copied.

Claim 1 is one of the two independent claims in this application. Claim 1 relates to a method of producing a background image (67) representing data (25). Claim 1 includes the following steps:

producing a first encoding of the data into a first binary array (40);

producing a second encoding of the data into a second binary array (41);

representing the first binary array as a first set (57) of modules of a first size of n x n pixels wherein each pixel is either white (63) or black (62) and every pixel in the module is identical to every other pixel in the module on nodes of a first lattice;

representing the second binary array as a second set (56) of modules of a second size of m x m wherein each pixel is either white (61) or black (60) and every pixel in the module is identical to every other pixel in the module, which is smaller than the first size on nodes of a second lattice;

combining the first (67) and second (65) sets of modules; and

printing (11) the first and second sets of modules.

Appellant's invention is shown in paragraph 024 of page 4 to paragraph 36 of page 9 and in paragraph 042 of page 11 to paragraph to paragraph 046 of page 12 of s specification. Claim 1 is also illustrated in Figs. 1 -15.

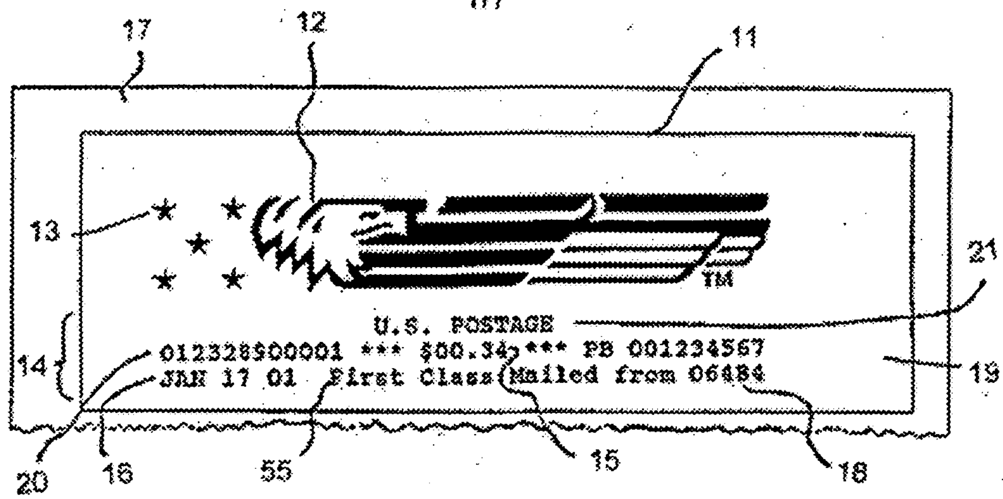

FIG. 1

Referring now to the drawings in detail, and more particularly to Fig. 1, the reference character 11 represents a postal indicia. Postal indicia 11 includes graphic material in the form of an eagle 12 and stars 13 and alphanumeric material 14. Indicia 11 also contains a dollar amount 15; the date 16 that postal indicia 11 was affixed to mail piece 17; the zip code where mail piece 17 was mailed from 18; the postal meter serial number 19; a security code 20; the class of mail 55; and the country 21.

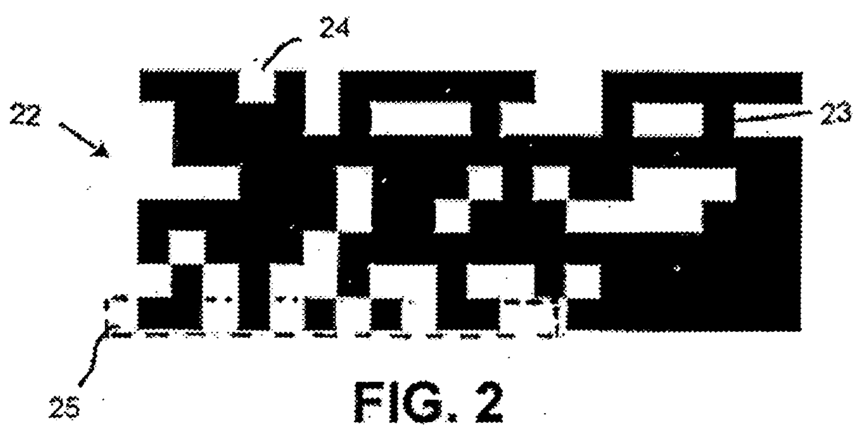

FIG. 2

Fig. 2 is a drawing of a two-dimensional bar code 22 that represents in coded form the information contained in material 14 and other information. Bar code 22 comprises a plurality of black modules 23 and white modules 24. Black modules 23 represent a "zero", and white

modules 24 represent a "one". Portion 25 of bar code 22 represents the zip code 18 of Fig. 1 with the least significant bit on the left.

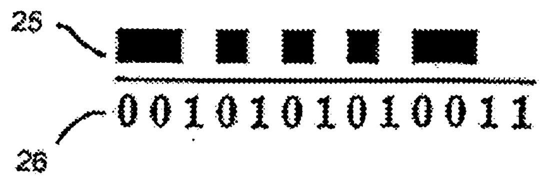

FIG. 3

Fig. 3 is a drawing of portion 25 of bar code 22. The binary representation of portion 25, i.e., zip code 18, is shown by a plurality of ones and zeros 26.

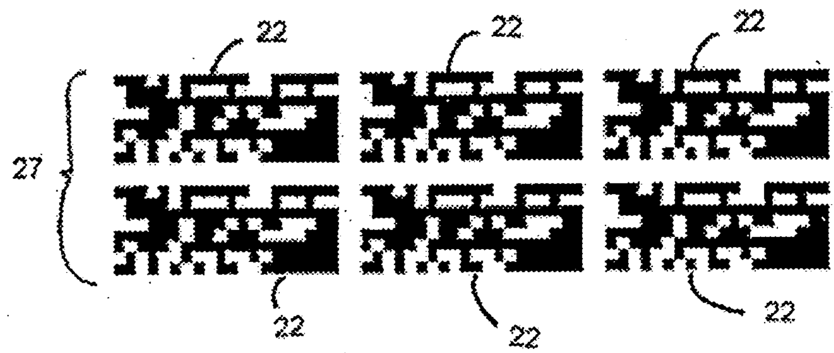

FIG. 4

Fig. 4 is a drawing of image 27 consisting of bar code 22 repeated m times in the horizontal direction and n times in the vertical direction, where m = 3 and n = 2. Thus, redundancy is applied by repeating the image of bar code 22 three times in the horizontal direction and two times in the vertical direction.

FIG. 5

Fig. 5 is a drawing showing the condensing of the six bar codes 22 into one bar code image 28.

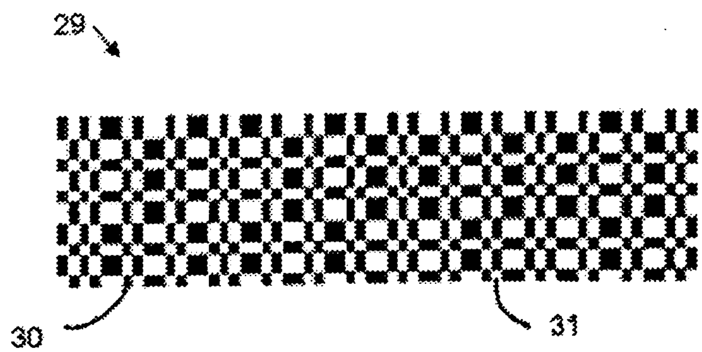

FIG. 6

Fig. 6 is a drawing of a mathematical filter 29 that has the same dimensions as bar code image 28 of Fig. 5, i.e., a length of 60 pixels and a width of 16 pixels. Filter 29 may be any arrangement of black pixels 30 and white pixels 31 as long as filter 29 contains the same number of black pixels 30 having a value of "0", and white pixels 31 having a value of "1". Filter 29 may be a pseudo random stream of bits such as the output of a cryptographic algorithm like the Digital Encryption Standard (DES). Alternatively, filter 29 may be an exclusive - or of a function of the X coordinate and a function of the Y coordinate as shown in Fig. 6. Filter 29 causes a pixel by pixel exclusive – or reversal -process when it filters an image. Thus, when the pixel of the filter is white, there will be a reversal between the image and the calculated filter image; and when the pixel of the filter is black, there will be no change between the image and the calculated filter image. The following chart shows the calculated filter value for different color image pixels and different color filter pixels.

COLOR OF PIXEL IMAGE	COLOR OF PIXEL IN FILTER	CALCULATED FILTER IMAGE
White = 1	White = 1	Black = 0
Black = 0	White = 1	White = 1
White = 1	Black = 0	White = 1
Black = 0	Black = 0	Black = 0

The filter 29 shown in Fig. 6 is applied to the bar code image 28 shown in Fig. 5 to make the redundant bar code image 28 information invisible. The filter algorithm implementation is a pixel by pixel exclusive - or operation between the image and the filter.

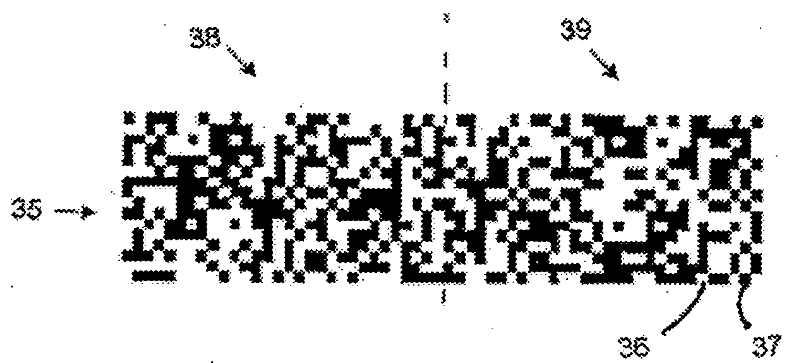

FIG. 7

Fig. 7 is the resulting image 35 of bar code image 28 (Fig 5) filtered by filter 29 (Fig. 6). Resulting image 35 is a matrix of sixty horizontal pixels by sixteen vertical pixels that include white pixels 36 and black pixels 37. Image 35 has a left half 38 and a right half 39. The number of pixels in half 38 equals the number of pixels in right half 39. If one would compare bar code image 28 with resulting image 35, one would observe that bar code image 28 does not correlate with resulting image 35. One would also note that the periodic structure of bar code image 28 is no longer visible in resulting image 35.

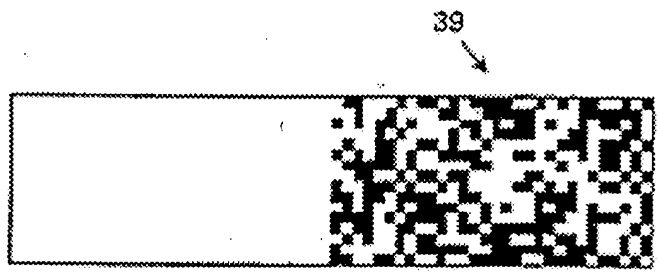

FIG. 8

Fig. 8 is a drawing of right half 39 of Fig. 7.

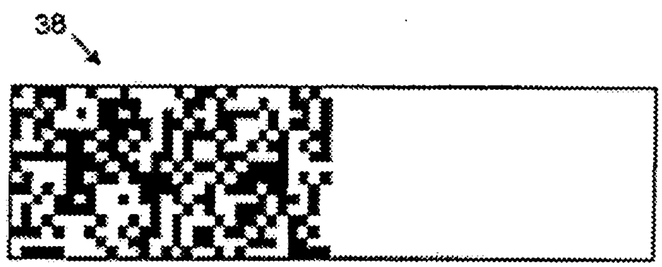

FIG. 9

Fig. 9 is a drawing of left half 38 of Fig. 7.

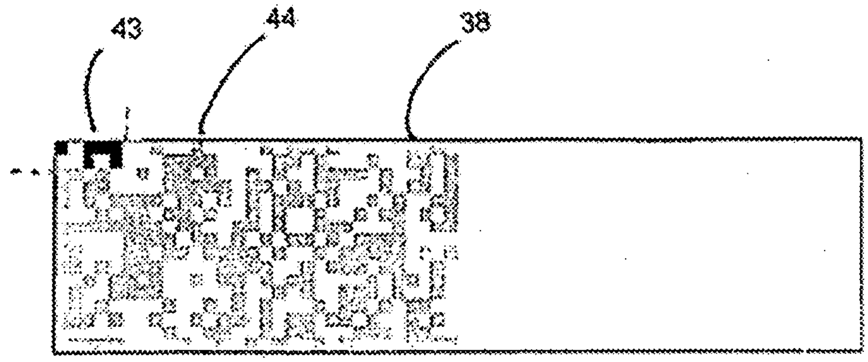

FIG. 9A

Fig. 9A is a drawing of left half 38 of Fig. 7 divided into section 43 and section 44. Section 43 is shown having black and white pixels. Section 44 is shown having gray and white pixels.

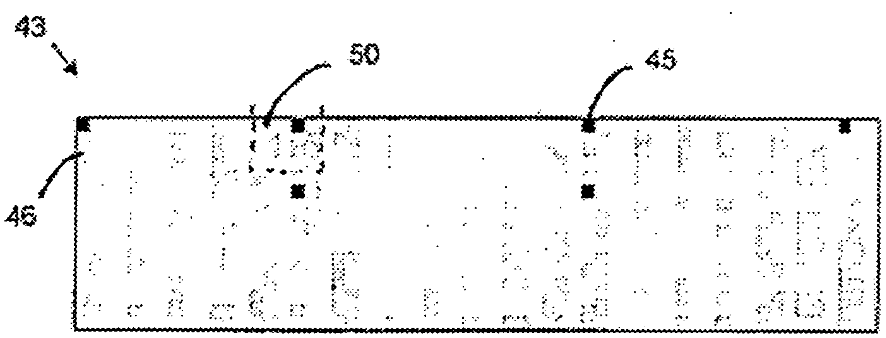

FIG. 9B

Fig. 9B is a drawing showing the spreading algorithm applied to section 43 of Fig. 9A. The spreading algorithm will be described in the description of Fig. 10. Black pixels are shown at 45, and white pixels are shown at 46. Section 43 has a region 50.

FIG. 10

Fig. 10 is a drawing of an image 40 when a spread spectrum-like algorithm is applied to left half 38. The spreading algorithm is used to increase the hiding capability and optimal recovery of the information hidden in image 40. The spreading algorithm disperses the information, i.e., white pixels and black pixels, in a manner that neighboring pixels in image 38 will not be close together in image 40. In image processing a spreading algorithm essentially transforms an image into another image by randomizing the rows and columns indexes.

FIG. 11

Fig. 11 is a drawing of an image 41 when a spreading algorithm is applied to right half 39. The spreading algorithm is used to increase the hiding capability and optimal recovery of the information hidden in image 41. The spreading algorithm disperses the information, i.e., white pixels and black pixels in a manner that the neighboring pixels in image 39 will not be

close together in image 41. In image processing, a spreading algorithm essentially transforms an image into another image by randomizing the rows and columns indexes. An example of a spreading algorithm is shown in the description of Fig. 10.

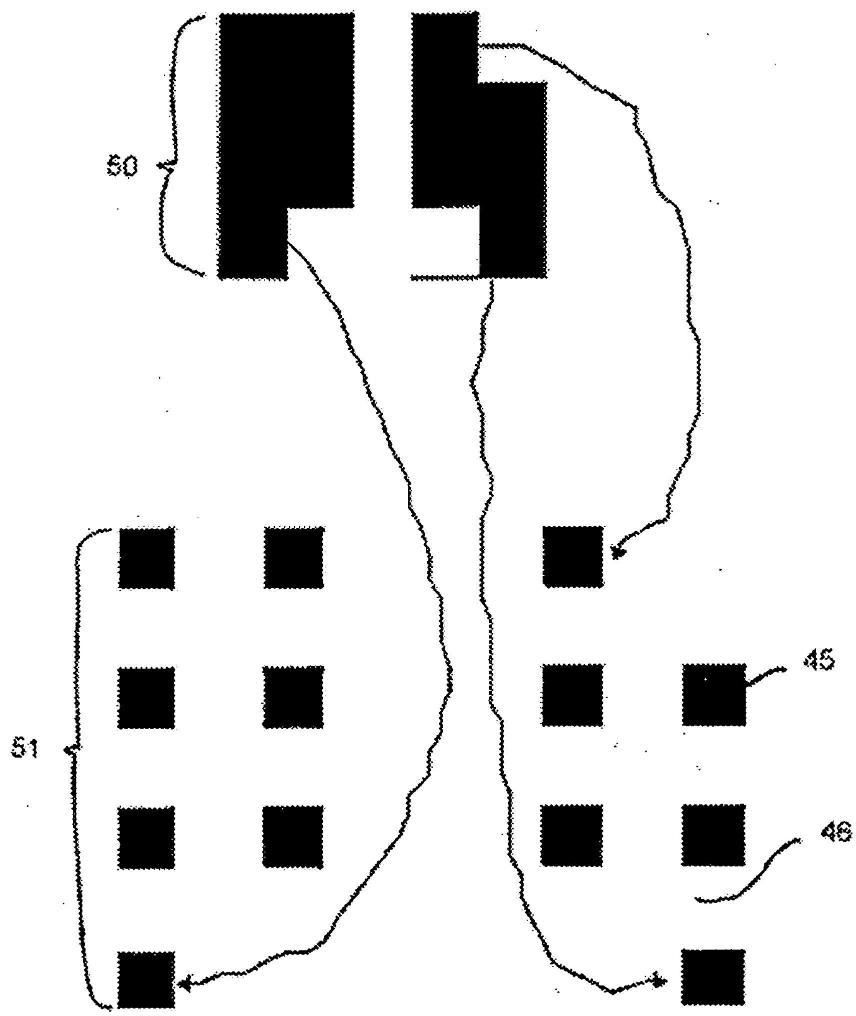

FIG. 12

Fig. 12 is a drawing of an enlarged view of region 50 of section 43 and region 50 expanded into region 51. Black pixels are shown at 45 and white pixels are shown at 46. One of the purposes of expanding an image is to control the lightness of the background and to provide a grid to enable a low resolution reading.

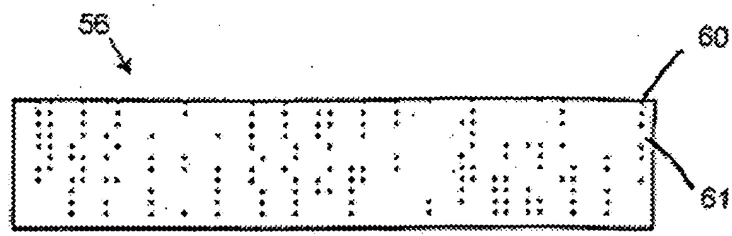

FIG. 13

Fig. 13 is a drawing of image 40 expanded to image 56. Black pixels are shown at 60, and white pixels are shown at 61. A cluster of 2 x 2 dots 60 is formed from one black pixel in image 56. No cluster is printed at location 61 to represent a white pixel in image 56.

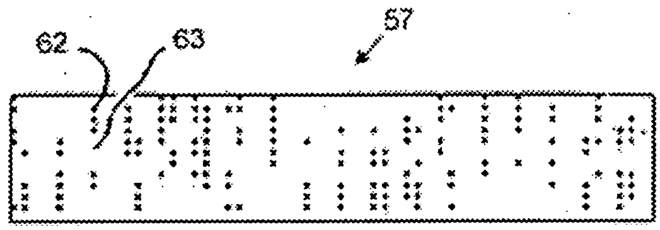

FIG. 14

Fig. 14 is a drawing of image 41 expanded to image 57. Black pixels are shown at 62, and white pixels are shown at 63. A cluster of 3 x 3 dots 62 is formed from one black pixel in image 57. No cluster is printed at location 63 to represent a white pixel in image 57. It would be obvious to one skilled in the art that many differently sized and shaped clusters may be used.

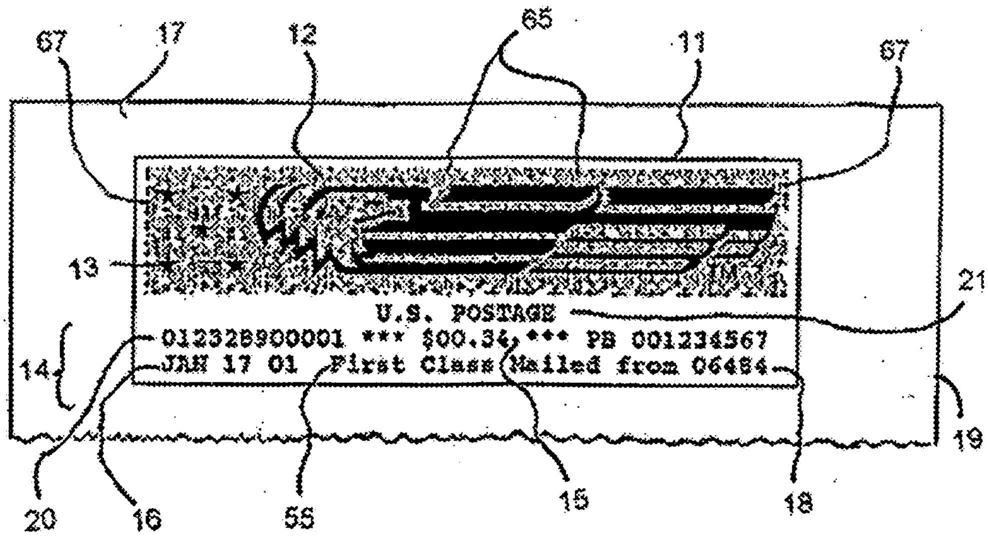

FIG. 15

Fig. 15 is a drawing of images 40 and 41 embedded in the graphical material portion of indicia 11 of Fig. 1. Image 40 black pixels are shown at 67 and image 41 black pixels are shown at 65. The manner in which images 40 and 41 change in appearance when they are photocopied, is described in Fig. 17 of copending patent application Docket No. F- 285 filed herewith entitled "Method For Reading Information That Has Been Embedded In An image" herein incorporated by reference.

Claim 5 is second of the two independent claims in this application. Claim 5 relates to a method for producing a composite image (11). Claim 5 includes the following steps: producing a first image(12, 13, 14) and a second image (65, 67) that embeds information in the first image;

representing information contained in the second image (65,67) by a two-dimensional bar code (38);

filtering the two-dimensional bar code (38) with a spreading algorithm that scrambles the information represented by the two-dimensional bar code (38);

splitting the bar code into an equal first part (38) and an equal second part (39), wherein each first part and each second part will contain an upper portion and a lower portion such that the lower portion of the first part and the upper portion of the second part will be white or empty space;

applying a spreading algorithm to the first part (38) and second part (39) to scramble the information to further hide the information in the first and second parts in a manner that the

spreading algorithm will move pixels in the first image (45,46) and the second image (39) so that the moved pixels will not be close together;

expanding the first (57) and second parts (56) over the entire image (11,12,13,14,65,67) that is going to be printed; and

printing the first and second parts over the first image (11,12,13) to produce an image containing hidden information.

The portion of 's specification that describes claim 5 has been set forth above.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Whether or not claims 1 - 4 are patentable under 35 U.S.C. §103(a) over Rhoads (U.S. Patent No. 6,636,615), in view of Cass et. al. (U.S. Patent No. 5,946,414.

B. Whether or not claims 5 - 8 are patentable under 35 U.S.C. §103(a) over - Muratani (U.S. Patent No. 6,768,807B1) in view of Roberts (U.S. Patent No. 6,882,442B2), and Rhoads (Pub. No. U.S. 2004/0264735 A1).

B. Whether or not claims 9 -17 are patentable under 35 USC §103(a) over Muratani (U.S. Patent No. 6,768,807B1), Roberts (U.S. Patent No. 6,882,442B2) and Rhoads (Pub. No. U.S. 2001/0022848A1) and further in view of Rhoads (U.S. Patent No. 6,636,615).

VII. ARGUMENTS

A. Claims 1 - 4 have been rejected by the Examiner under 35 USC §103(a) over Rhoads (U.S. Patent No. 6,636,615), in view of Cass et. al. (U.S. Patent No. 5,946,414.

Rhoads discloses the following in lines 20-37 of column 4.

"The document **10** includes an image (not explicitly shown) that has two digital watermarks inserted therein. In the first embodiment of the invention, the first watermark has a fine grain arid the second watermark has a course grain. The grain of the two watermarks is illustrated in FIG. 2 FIG 2A shows the grain of the first watermark and FIG. 2B shows the grain of the second watermark. The first watermark uses blocks of 9 pixels (a 3 by 3 block). Each of the pixels in each 9 pixel block has its gray value changed by the same amount. For example FIG. 2A shows that the first 9 pixel block has its gray value increase and the second 9

pixel block has its gray value decreased. The amount of increase and the selection of blocks that is increased and decreased is conventional."

As shown in FIG. 2B, the grain of the second watermark is in blocks that are 6 pixels by 6 pixels or 36 pixels. All of the pixels in each 36 pixel block are changed by the same amount."

Rhoads discloses the following in line 56 of column 4 to line 15 of column 5.

"FIGS. 3A and 3B show an alternative technique for implementing the present invention. In the second embodiment of the invention, the two watermarks inserted into the image on a document have different patterns of assigning pixels to the bits of the payload represented by the watermark. The first watermark utilizes a geometrically linear assignment of pixels to each bit. For example FIG. 3A shows an image that ahs 500 by 500 pixels. Considering a watermark payload with 50 bits, each bit of the watermark would have 5000 pixels assigned to represent that bit. A linear assignment could have each fifth bit in each row (100 bits per row) and each fifth row (50 rows) assigned to each bit of the watermark. Thus 5000 pixels would be assigned to each bit in a very orderly or linear manner.

In the second watermark the pixels would be assigned to each bit in a random manner as shown in FIG. 3B. Each bit in the watermark would still have 5000 assigned bits; however, the pixels would be a random location over the image. Naturally it should be understood that FIG. 3A and 3B illustrate how pixels are assigned to one bit of the watermark. The other bits of the watermarks would have pixels assigned in a similar manner.

Similar to the first embodiment of the invention, the watermark with a linear assignment of pixels and the watermark with a random assignment of pixels would be affected differently by handling and wear on the original document than they would be by being scanned and reprinted."

Rhoads modifies an image by embedding a watermark in an image. Rhoads is watermarking a continuous tone.

Cass discloses the following in lines 56-67 of col. 14.

"Before proceeding with the description of the invention, it is useful to provide definitions and clarification of some of the terminology used herein; this terminology is discussed with reference to FIG. **48**. It was noted above that a signal block has dimensions of KxK expressed in units called "color cells." In the context of this invention, a "printer cell" is the smallest unit of the absence or presence of a mark on a printed medium. FIG. **48** shows a small, substantially solid filled, uniformly sized circles representing printer cells, such as printer cell **342**. In a black and white printer a printer cell is approximately a single printer spot."

Appellant's claims in claim 1 and those claims dependent thereon a different and non obvious invention than that disclosed by Rhoads and/or Cass. Rhoads and/or Cass do not disclose or anticipate the following steps of claim 1, namely representing the first binary array as

a first set of modules of a first size of n x n pixels wherein each pixel is either white or black and every pixel in the module is identical to every other pixel in the module on nodes of a first lattice; and representing the second binary array as a second set of modules of a second size, of m x m wherein each pixel is either white or black and every pixel in the module is identical to every other pixel in the module which is smaller than the first size on nodes of a second lattice; combining the first and second sets of modules.

Cass discloses individual printer cells 342 that are black and white or color. Thus, Cass does not disclose or anticipate an array of printer cells (pixels) that are n x n where n is at least 2 cells (pixels) since m is smaller than n.

Notwithstanding the foregoing, in rejecting a claim under 35 U.S.C. §103, the Examiner is charged with the initial burden for providing a factual basis to support the obviousness conclusion. ***In re Warner,*** 379 F.2d 1011, 154 USPQ 173 (CCPA 1967*); **in re Lunsford,*** 375 F.2d 385, 148 USPQ 721 (CCPA 1966); ***in re Freed***, 425 F.2d 785, 165 USPQ 570 (CCPA 1970). The Examiner is also required to explain how and why one having ordinary skill in the art would have been led to modify an applied reference and/or combine applied references to arrive at the claimed invention. ***In re Ochiai***, 37 USPQ2d 1127 (Fed. Cir. 1995); **in re Deuel**, *51 F.3d 1552, 34 USPQ 1210 (Fed. Cir. 1995);* ***in re Fritch***, 972 F.2d 1260, 23 USPQ 1780 (Fed. Cir. 1992); ***Uniroyal, Inc. v. Rudkin-Wiley Corp.***, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988). In establishing the requisite motivation, it has been consistently held that both the suggestion and reasonable expectation of success must stem from the prior art itself, as a whole. ***In re Ochiai***, supra; **in re Vaeck**, *947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991);* ***in re Fine***, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); ***in re Dow Chemical Co.***, 837 F.2d 469, 5 USPQ2d 1529 (Fed. Cir. 1988).

B. Claims 5 - 8 have been rejected by the Examiner under 35 U.S.C. §103(a) over Muratani (U.S. Patent No. 6,768,807B1) in view of Roberts (U.S. Patent No. 6,882,442B2), and Rhoads (Pub. No. U.S. 2004/0264735 A1).

Muratani discloses the following in line 28-47 of Column 5.

> "The first digital watermark embedding device by which digital data is assumed to be an embedding target and the digital watermark is embedded, according to the present invention is characterized by comprising: spread spectrum means to set said embedding target to be a unit spreading block which performs the spread spectrum of the spreading block in which said embedding target includes more than two adjacent basic unit of each bases which constructs the plurality of basic

units, multiplies the same pseudo-random number signal is multiplied to said embedding target more than two said basic units in said unit spreading block, and watermark embedding means to embed the digital watermark information embedded by the direct sequence spread spectrum method can be prevented being distributed to the high frequency region in the inverse spread spectrum processing, in addition, digital watermark information can not be easily disappeared."

Muratani discloses the following in Column 20 lines 1-9.

"Embedded position selection section 81 decides the position in the frequency domain where watermark information should be embedded without depending on the frequency component value (embedded position). In the following explanation, it is assumed that the embedded position (u, v) is one point, and and it is also possible to set a plurality of points embedded positions. In that case, embedded position selection section 81 gives set Sf of embedded position (u, v) in the frequency domain."

Muratani discloses the following in column 20 lines 29-48.

"In addition, to avoid the beating between watermark information embedded in two or more positions, the embedded position may be decided in embedded position selection section 81. For example, when the plurality of embedded positions generated with random numbers has a turning value with the same point and the neighborhood point in the pixel value domain, it might be able to be recognized when overlap of a turning value becomes an area having one dimension or two-dimensional extensions but not at one point. Then, the function to judge whether such a beating is occurred between plurality of embedded positions to embedded position selection section 81 is provided, the validity of the candidate is judged by this judgment function every time the candidate in the embedded position is generated, a corresponding candidate is abandoned when judged an improper candidate, and the configuration which selects it as an element of set Sf of the embedded position may be added when judged an appropriate candidate."

Roberts discloses the following in lines 6-30 of column 19.

"Where a plurality of remote users access and print coupons from a variety of remote station configurations having a variety of printer types, the particular resolution associated with each such printer type may vary widely. Inaccuracies arise when the pixel width of a barcode image does not match or align with the available pixels in a defined width based on a given printer's resolution.

A very basic example of this is illustrated in the series of FIGS. 11A-11D, wherein a barcode 200 has a pixel width PW of two and the bar code comprises one black stripe 202 adjacent one white stripe 204. For a given printer having a resolution of 3, the prior art methods would stretch the image by a factor of 1.5 and every third pixel column would be interpolated to generate print information. This misalignment factor of 3 is arrived at be taking the print area width,3 , and dividing by the

difference(3-2=1) between the print area,3 , and the bar code pixel width,2 . The prior art rendering methods would result in a printed image having one of the following bar sequences: 1) black, gray, white, FIG.11B; 2) black, black, white, FIG. 11C; or 3) black, white, white, FIG. 11D. In all three of these resulting stripe sequences the printed image is an inaccurate representation of the original bar code data and the bar code reader will detect the inaccuracies and the decoder will compile inaccurate data therefrom."

Rhoads discloses the following in Paragraphs 0050-0052 of (Pub. No. US 2004/0264735 A1).

"[0050] In the foregoing techniques, it is sometimes necessary to trade-off the tweak values of adjoining regions. For example , a line may pass along a border between regions, or pass through the point equidistant from four grid points ("equidistant zones"). In such cases, the line may be subject to conflicting tweak values-one region may want to increase the line width, while the another may want to decrease the line width. (Or both may want to increase the line width, but differing amounts.) Similarilyin cases where the line does not pass through an equidistant zone, but the change in line width is a function of a neighborhood of regions whose tweaks are different values. Again, known interpolation functions can be employed to determine the weight to be given the tweak from each region in determining what change is to be made to the line width in any given region.
[0051] In the exemplary watermarking algorithm, the average change in luminosity across the security document image is zero, so no generalized lightening or darkening of the image is apparent. The localized changes in luminosity are so minute in magnitude, and localized in position, that they are essentially invisible (e.g. inconspicuous/subliminal) to human viewers.
[0052] An alternative technique is shown in **FIG.6**, in which line position is changed rather than line width."

Neither Muratani or Roberts or Rhoads taken separately or together disclose or anticipate the following step of claim 5, namely applying a spreading algorithm to the first part and second part to scramble the information to further hide the information in the first and second parts in a manner that the spreading algorithm will move pixels in the first image and the second image so that the moved pixels will not be close together.

The cited references transform the image in a different manner than that claimed by applicants.

Notwithstanding the foregoing, in rejecting a claim under 35 U.S.C. §103, the Examiner is charged with the initial burden for providing a factual basis to support the obviousness conclusion. ***In re Warner,*** 379 F.2d 1011, 154 USPQ 173 (CCPA 1967); ***in re Lunsford,*** 375

F.2d 385, 148 USPQ 721 (CCPA 1966); ***in re Freed***, 425 F.2d 785, 165 USPQ 570 (CCPA 1970). The Examiner is also required to explain how and why one having ordinary skill in the art would have been led to modify an applied reference and/or combine applied references to arrive at the claimed invention. ***In re Ochiai***, 37 USPQ2d 1127 (Fed. Cir. 1995); **in re Deuel**, *51 F.3d 1552, 34 USPQ 1210 (Fed. Cir. 1995);* ***in re Fritch***, 972 F.2d 1260, 23 USPQ 1780 (Fed. Cir. 1992); ***Uniroyal, Inc. v. Rudkin-Wiley Corp.***, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988). In establishing the requisite motivation, it has been consistently held that both the suggestion and reasonable expectation of success must stem from the prior art itself, as a whole. ***In re Ochiai***, supra; **in re Vaeck**, *947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991);* ***in re Fine***, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); ***in re Dow Chemical Co.***, 837 F.2d 469, 5 USPQ2d 1529 (Fed. Cir. 1988).

B. Claims 9 -17 have been rejected by the Examiner under 35 USC §103(a) over Muratani (U.S. Patent No. 6,768,807B1), Roberts (U.S. Patent No. 6,882,442B2) and Rhoads (Pub. No. U.S. 2001/0022848A1) and further in view of Rhoads (U.S. Patent No. 6,636,615).

C.

The cited references have been discussed above. They do not disclose or anticipate the following step of claim 5 namely applying a spreading algorithm to the first part and second part to scramble the information further hide the information in the first and second parts in a manner that the spreading algorithm will move pixels in the first image and the second image so that the moved pixels will not be close together.

PRAYER FOR RELIEF

Appellant's respectfully submit that appealed claims 1 - 17 in this application are patentable. It is requested that the Board of Appeal overrule the Examiner and direct allowance of the rejected claims.

Respectfully submitted,

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CERTIFICATE OF MAILING

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VIII. Appendix of Claims Involved in the Appeal

1. A method of producing a background image representing data comprising the steps of:

producing a first encoding of the data into a first binary array;

producing a second encoding of the data into a second binary array;

representing the first binary array as a first set of modules of a first size of n x n pixels wherein each pixel is either white or black and every pixel in the module is identical to every other pixel in the module on nodes of a first lattice;

representing the second binary array as a second set of modules of a second size of m x m wherein each pixel is either white or black and every pixel in the module is identical to every other pixel in the module, which is smaller than the first size on nodes of a second lattice;

combining the first and second sets of modules; and

printing the first and second sets of modules.

2. The method claimed in claim 1, further including the step of:

superimposing graphic material on the modules before printing.

3. The method claimed in claim 2, wherein the graphic material is a postal indicia.

4. The method claimed in claim 1, wherein the modules on the first lattice and the modules on the second lattice do not overlap.

5. A method for producing a composite image comprising the steps of:

producing a first image and a second image that embeds information in the first image;

representing information contained in the second image by a two-dimensional bar code;

filtering the two-dimensional bar code with a spreading algorithm that scrambles the information represented by the two-dimensional bar code;

splitting the bar code into an equal first part and an equal second part, wherein each first part and each second part will contain an upper portion and a lower portion such that the lower portion of the first part and the upper portion of the second part will be white or empty space;

applying a spreading algorithm to the first part and second part to scramble the information to further hide the information in the first and second parts in a manner that the spreading algorithm will move pixels in the first image and the second image so that the moved pixels will not be close together;

expanding the first and second parts over the entire image that is going to be printed; and

printing the first and second parts over the first image to produce an image containing hidden information.

6. The method claimed in claim 5, wherein the first image is a postal indicia.

7. The method claimed in claim 5, wherein the first and second images are printed on a medium.

8. The method claimed in claim 5, wherein:

at each location in which information from the first parts is going to be printed, the printed information will be a printed pixel of a specified dimension, and

at each location in which information from the plurality of second parts is going to be printed, the printed information will be a printed pixel of a specified dimension that differs from the pixels printed in the first parts.

9. The method claimed in claim 5, wherein when the first and second images are scanned and printed, the printed pixels of specified dimensions in the first and second parts will become larger.

10. The method claimed in claim 9, wherein the change in size of the printed pixels of specified dimensions in the first and second parts is detectable by the unaided human eye.

11. The method claimed in claim 9, wherein the change in size of the printed pixels of specified dimensions in the first and second parts is detectable by a scanner.

12. The method claimed in claim 5, further including the steps of:

photocopying the first and second images; and

noticing a change in appearance of the second image.

13. The method claimed in claim 5, further including the steps of:

scanning the first and second images; and

noticing a change in appearance of the second image.

14. The method claimed in claim 5, wherein when the first and second images are photocopied, the printed pixels of specified dimensions in the first and second parts will become larger.

15. The method claimed in claim 14, wherein the change in size of the printed pixels of specified dimensions in the first and second parts is detectable by the unaided human eye.

16. The method claimed in claim 14, wherein the change in size of the printed pixels of specified dimensions in the first and second parts is detectable by the scanner.

17. The method claimed in claim 5, wherein the first image will not change in appearance when the first image is scanned or photocopied.

IX. EVIDENCE APPENDIX

There is no additional evidence to submit.

XI RELATED PROCEEDING APPENDIX

There are no related Appeals and Interferences.